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(19)

(54) IMPROVEMENTS IN RIDING STIRRUPS

(71) I, GIAN CARLO BALDUCCI, an Italian citizen, of 287 Via Conca d'Oro, Rome, Italy, do hereby declare the invention, for which I pray that a Patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to riding stirrups and is particularly concerned with an adjustable stirrup which permits a rider to assume the ideal riding position with the minimum of effort required from the leg muscles of the rider.

It is well known that a rider can control a horse more easily by means of its legs if the rider is in a so-called equilibrium position that is an ideal riding position in which his knees grip the saddle and the soles of his feet are directed outwardly. The closer the rider is to this ideal position, the easier it is for the rider to control his mount and the further the rider is from this position the harder it is for the rider to control his mount and the more effort is required from the muscles of the rider's legs in order to maintain the rider in the saddle.

Conventional rigid stirrups require quite considerably effort from the rider if he is to assume the ideal riding position since the rider must consciously point his feet outwards and press his knees against the saddle. The conventional stirrups provide no assistance and this stance adopted by the rider can prove tiring after a long period in the saddle.

The present invention aims to overcome the disadvantages inherent in conventional stirrups.

According to the invention, there is provided an adjustable riding stirrup comprising a bar member, a stirrup plate pivotally mounted on one end of the bar member by means of a pivot pin, said pivotal movement being about the axis of said pivot pin and being restricted to a limited angle, and a stirrup strap connection hook having an extension mounted in the other end of said bar member and being adjustable along an axis substantially parallel to the pivotal axis of said stirrup plate. A resilient pad may be mounted on the stirrup plate to cushion the effect of the stirrup rider's foot.

Preferably, the extension comprises a hollow, internally threaded first sleeve pivotally connected to the connection hook and slidable in a bushing in the bar member, a knob being provided which is integrally connected to a hollow externally threaded second sleeve, the thread of which is engaged with the internal thread of said first sleeve, a stem outwardly biased by a compression coil spring being mounted in the bore of said second sleeve and a frusto-conical block being provided at the end of said stem, said block being adapted to be engaged in a similar frusto-conical bore provided in a baffle of said first sleeve.

The frusto-conical block may consist of friction material.

By means of the stirrup according to the invention, a rider's ankle is rotated automatically in such a way that the sole of his foot is directed outwards without requiring any effort from the rider. In this way, a rider can adopt the ideal riding position with a noticeable reduction in effort required from his leg muscles in order to maintain the rider in the ideal riding position. In addition to directing the sole of the foot outwards, the stirrup according to the invention furthermore tends to force the knee against the saddle automatically thus further reducing the effort required from the rider. Moreover, a rider can easily use his legs to control his mount whenever he wants to even if he is standing on the stirrup plates and is raised from the saddle.

The invention will now be further described, by way of example, with reference to the accompanying drawings, in which:—

Fig. 1 is a vertical front, partially-sectioned, view of a stirrup according to the invention, showing the end condition of the adjusting device, before starting the adjusting operation;

Fig. 2 is a vertical front view of the stirrup

shown in Fig. 1, after an adjustment has been made;

Fig. 3 shows a plan view of the stirrup:

Fig. 4 shows a vertical view of the outside of the stirrup according to the invention; and

Fig. 5 is a section, to an enlarged scale, of the adjusting device located in the eyelet of the stirrup according to the invention.

The drawings show the right stirrup and it should be noted that the left stirrup is a mirror image of the illustrated stirrup. The stirrup would be attached to a saddle strap in such a manner that, when fitted onto a horse, the horse would be located to the left of the stirrup shown in Figs. 1 and 2.

Referring to the Figures, the stirrup according to the invention comprises a stirrup plate 10 on the upper surface of which a resilient pad 11 is provided consisting of foamed rubber or the like. The pad 11 is adapted to support the foot of the rider and is capable of yielding by some centimeters in order to take up the differences between the locus of the points in which the stirrup plate lies during its rotation about the knee of a rider and the locus of the points in which the stirrup plate lies during its rotation about the connection point of the stirrup strap to the saddle.

The stirrup plate 10 is pivotally mounted by means of a pin 12 on an arcuate bar member 13. The pivotal connection between the stirrup plate 10 and bar member 13 is such as to enable the stirrup plate to pivot about the pin 12 by an angle of nearly 12°, as shown in dotted line in Fig. 4. This is designed to uniformly distribute the weight of the rider onto the stirrup plate 10, said weight being permanently maintained along the X—X axis shown in Figs. 1 and 2.

A connection hook 14 of the stirrup strap (not shown), which is also called a stirrup eyelet, is attached to the upper end of the bar member 13. The connection hook 14 can be adjusted transversely to the stirrup plate 10. It is known that a rider discharges his body weight onto a characteristic point depending on the shape of his feet, namely on the length, width and straddle characteristics thereof. Therefore, with the aim to achieve the ideal riding position, it is necessary to ensure the correct alignment of the connection point of the stirrup strap to the saddle. To attain this objective, the connection hook 14 is adjustably connected to the bar member 13 by means of an adjustment device. The connection is additionally made such that, when the above-mentioned alignment condition is obtained, the upper arm of hook 14 is parallel to the plane of stirrup plate 10.

As shown in Fig. 5, the connection hook 14 has a cam shaped body portion 14*a* with two adjacent rectilinear lobes 14*b* and 14*c* and is pivotally mounted on a hollow, internally threaded sleeve 16 by means of a pin 15. The lobe 14*b* is located further away from the pin 15 than the lobe 14*c*. The sleeve 16 is slidably but non-rotatably mounted in a bushing 17 integrally formed with the bar member 13.

The main adjusting device comprises a knob 22 threadedly or otherwise integrally connected to a hollow, externally threaded member 23, the thread of which is engaged with the internal thread of sleeve 16. A stem 25, which is biased to the left in Fig. 5 by a compression coil spring 24, is non-rotatably located in the bore of sleeve 23 and is restrained therein by a head portion at the end of the stem 25 which can engage with the end of the sleeve 23 from which said stem extends. A frusto-conical block 26 of friction material is provided at the end of stem 25 and it is adapted to be engaged in a similar frusto-conical bore that is provided in a baffle 27 of the sleeve 16.

The operation takes place as follows. Starting from the Fig. 1 position, it is assumed that the above-mentioned alignment condition requires that the connection hook or stirrup eyelet 14 be shifted to the right from the position shown in Fig. 1. In this position, the lobe 14*c* of body portion 14*a* of the hook is engaged by the frusto-conical block 26 which is urged against the lobe by the spring 24 and is at the same time disengaged from the frusto-conical bore of the baffle 27. By rotating the knob 22, sleeve 16 is caused to move to the right since it is non-rotatably held in the bushing 17. When the position shown in Fig. 2 is reached, the rider can bear his weight on the stirrup plate 10 which causes a slight rotation of hook 14 to take place so that the lobe 14*b* pushes the frusto-conical block 26 into engagement with the bore in the baffle 27. In this condition, any further rotation of knob 22 is inhibited and an automatic stoppage is obtained. Therefore, it is apparent that the automatic stoppage is obtained when the alignment of the above said point is obtained and when the upper arm of hook 14 and the stirrup plate 10 are located parallel to each other.

The adjustment of the stirrup preferably takes place when a rider is seated in the saddle and his mount is still. The rider's feet are in the stirrups and he finds that his riding position is not ideal so that the stirrups are in need of adjustment. The rider therefore leans forward until he can reach the knob 22 which he turns until the knob meets with resistance. During the adjustment of the knob 22, the rider must turn his foot inwards towards the horse which causes the hook 14 to pivot about the pin 15 so that the lobe 14*a* is located opposite the block 26 and thus the block is not in engagement with the baffle 27

so that the sleeve 23 can rotate when the knob 22 is turned. At the end of the adjustment, the foot is returned to the normal riding position which causes the hook 14 to pivot about the pin 15 so that the lobe 14*b* forces the block 26 into frictional engagement with the baffle 27 to prevent further rotation of the sleeve 23 and hence turning of the knob 22.

It can be appreciated from Fig. 3 that hook 14 is inclined with respect to the axis of the stirrup plate; this is designed in order to impart a twist to the stirrup strap which is adapted to enable a better fit of the stirrup strap to the anatomical shape of a rider's leg and aids to hold the foot at its place, thus facilitating the reinsertion of the foot in the stirrup should it be withdrawn for any reason.

A further structural feature of the above stirrup is the stopping or blocking lug 18 (Fig. 2) which is provided on the stirrup plate at the opposite side to bar 13 and which serves to prevent a rider's foot from slipping off the stirrup plate.

WHAT I CLAIM IS:—

1. An adjustable riding stirrup comprising a bar member, a stirrup plate pivotally mounted on one end of the bar member by means of a pivot pin, said pivotal movement being about the axis of said pivot pin and being restricted to a limited angle, and a stirrup strap connection hook having an extension mounted in the other end of said bar member and being adjustable along an axis substantially parallel to the pivotal axis of said stirrup plate.

2. An adjustable stirrup according to claim 1, wherein a resilient pad is mounted on said stirrup plate.

3. An adjustable stirrup according to claim 1 or claim 2, wherein the extension comprises a hollow, internally threaded first sleeve pivotally connected to the connection hook and slidable in a bushing in the bar member, a knob being provided which is integrally connected to a hollow externally threaded second sleeve, the thread of which is engaged with the internal thread of said first sleeve, a stem outwardly biased by a compression coil spring being mounted in the bore of said second sleeve and a frusto-conical block being provided at the end of said stem, said block being adapted to be engaged in a similar frusto-conical bore provided in a baffle of said first sleeve.

4. An adjustable stirrup according to claim 3, wherein said frusto-conical block consists of friction material.

5. An adjustable stirrup according to claim 3 or claim 4, wherein the connection hook has a body portion which is pivoted to the first sleeve by means of a pin and which is cam shaped with two lobes one of which is closer to the pin than the other.

6. An adjustable stirrup according to claim 5, wherein the lobe which is further from said pin is adapted to push said frusto-conical block into engagement with the frusto-conical bore provided in the baffle of said first sleeve.

7. An adjustable stirrup according to any preceding claim, wherein the pivoting angle of the stirrup plate is not greater than 12°.

8. An adjustable stirrup according to any preceding claim, wherein the stirrup strap connection hook is slanted with respect to the pivot axis of the stirrup plate such as to impart, in use, a twist to the stirrup strap.

9. An adjustable stirrup according to any preceding claim, wherein a foot stopping or blocking lug is provided on the stirrup plate on the opposite side from the bar member.

10. An adjustable stirrup substantially as described herein with reference to the accompanying drawings.

R. R. PRENTICE,
Chartered Patent Agent,
5 Argyle Road,
Southborough,
Tunbridge Wells,
Kent.
Agent for the Applicant.

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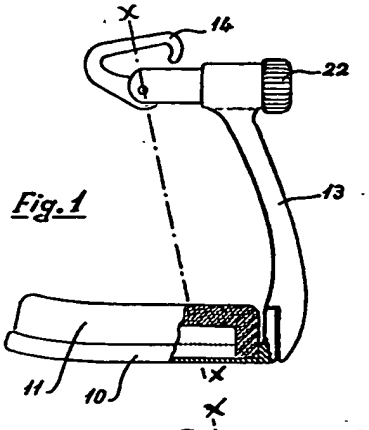

Fig. 1

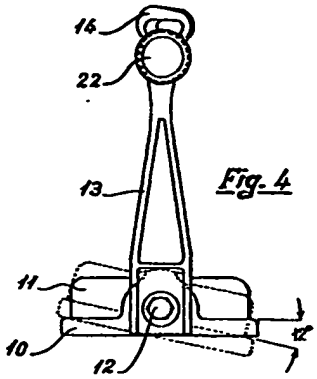

Fig. 4

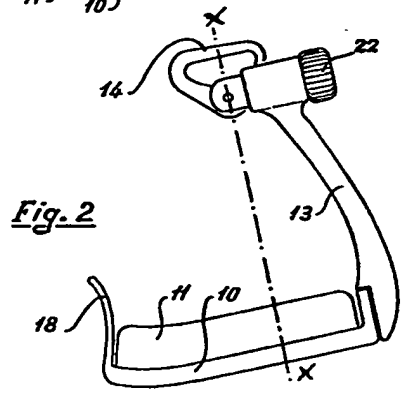

Fig. 2

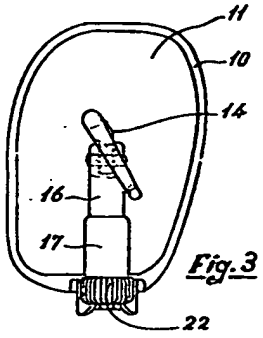

Fig. 3

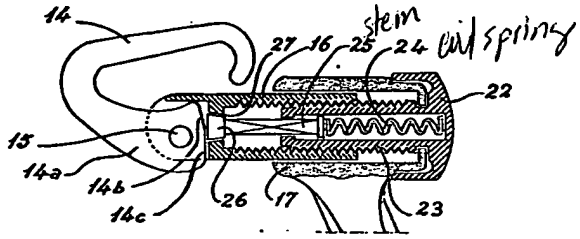

Fig. 5